

In the Claims

1 1. (currently amended) A circuit for protecting devices in an RF power amplifier
2 comprising:
3 a peak detector coupled to an output of the power amplifier for detecting peak voltages at the
4 output of the power amplifier, wherein the peak detector further comprises:
5 a first peak detector having an input coupled to the output of the power amplifier;
6 a second peak detector having an input coupled to a reference tone; and
7 control circuitry coupled to the peak detector and to the power amplifier for controlling the gain
8 of the power amplifier, wherein the control circuitry decreases the gain of the power
9 amplifier when the peak detector detects a voltage above a voltage threshold.

1 Claim 2 (cancelled)

1 3. (currently amended) The circuit of claim 1 ~~claim 2~~, wherein outputs of the first and
2 second peak detectors are combined to provide a peak detection signal to the control circuitry.

1 4. (original) The circuit of claim 3, wherein the first and second peak detectors are matched.

1 5. (original) The circuit of claim 3, wherein the outputs of the first and second peak detectors
2 are combined by subtracting the output of the second peak detector from the output of the first
3 peak detector.

1 6. (original) The circuit of claim 3, further comprising a divider circuit coupled between the
2 first peak detector and the output of the power amplifier.

1 7. (currently amended) The circuit of claim 6 ~~claim 1~~, wherein the divider circuit is
2 comprised of a first and second capacitor coupled between the output of the power amplifier and
3 ground.

1 8. (original) The circuit of claim 1, further comprising a power detector coupled to the output
2 of the power amplifier and to the control circuitry for detecting the output power of the power
3 amplifier.

1 9. (currently amended) A circuit comprising:
2 an RF power amplifier having an input and an output;
3 a peak detector coupled to the power amplifier for detecting a peak voltage at a node of the
4 power amplifier, wherein the peak detector is comprised of first and second peak
5 detectors; and
6 power control circuitry coupled to the peak detector and to the power amplifier for controlling
7 the gain of the power amplifier, wherein the power control circuitry limits the power at
8 the output of the power amplifier when the peak detector detects a peak voltage greater
9 than a threshold voltage.

1 Claim 10 (canceled)

1 11. (currently amended) The circuit of claim 9 ~~claim 10~~, wherein the first peak detector is
2 coupled to the output of the power amplifier and the second peak detector is coupled to a
3 reference tone.

1 Claim 12 (original) The circuit of claim 11, wherein the first and second peak detectors are
2 matched.

1 13. (original) The circuit of claim 9, further comprising a power detector coupled to the output
2 of the power amplifier and to the power control circuitry for detecting the output power of the
3 power amplifier.

1 14. (currently amended) A method of protecting devices in an RF power amplifier
2 comprising the steps of:
3 detecting a peak voltage at a first node of the power amplifier, wherein the peak voltage is
4 detected using the steps of:
5 providing a first peak detector coupled to the output of the power amplifier; and
6 providing a second peak detector coupled to a reference tone;
7 determining whether the detected peak voltage is higher than a threshold voltage; and
8 if it is determined that the detected peak voltage is higher than the threshold voltage, decreasing
9 the gain of the power amplifier.

1 15. (original) The method of claim 14, further comprising the step of detecting the output power
2 of the power amplifier.

1 16. (original) The method of claim 15, wherein the gain of the power amplifier is increased if
2 the detected output power is less than a desired power level, and if the detected peak voltage is
3 lower than the threshold voltage.

1 17. (original) The method of claim 15, wherein the gain of the power amplifier is decreased if
2 the detected output power is greater than a desired power level, or if the detected peak voltage is
3 higher than the threshold voltage.

1 Claim 18 (canceled)

1 19. (currently amended) The method of claim 14 ~~claim 18~~, wherein the first and second
2 peak detectors are matched.

1 20. (currently amended) A method of controlling an RF power amplifier comprising the
2 steps of:

3 detecting the output power of the RF power amplifier;

4 detecting a peak voltage at a first node of the power amplifier, wherein the step of detecting a

5 peak voltage further comprises the steps of:

6 providing a first peak detector coupled to the power amplifier;

7 providing a second peak detector coupled to a reference tone; and

8 combining the outputs of the first and second peak detectors;

9 increasing the gain of the power amplifier if the detected output power is less than a desired

10 output power level and if the detected peak voltage does not exceed a threshold voltage;

11 and

12 decreasing the gain of the power amplifier if the detected output power is greater than the desired

13 output power level or if the detected peak voltage exceeds a threshold voltage.

1 Claims 21-22 (canceled)

1 23. (currently amended) The method of claim 20 ~~claim 22~~, wherein the first peak detector
2 and the second peak detector are matched.

1 24. (currently amended) The method of claim 20 ~~claim 22~~, wherein the outputs of the first
2 and second peak detectors are combined by subtracting the output of the second peak detector
3 from the output of the first peak detector.